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EXAMINER

MIRZA, ADNAN M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/991,109	Applicant(s) DYCKERHOFF ET AL.	
	Examiner ADNAN MIRZA	Art Unit 2445	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44, 46-57, 59 and 61-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44, 46-57, 59 and 61-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This communication is in response to the application filed on the 02/20/2009 wherein claims 1-44, 46-57, 59, 61-64 are presented.

Status of the claims

Claims 1-44, 46-57, 59, 61-64 are rejected under 35 U.S.C. 103.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-44, 46-57, 59, 61-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sundqvist (U.S. 2001/0023445) and further in view of Vega-Garcia et al (U.S. 7,151,749).

As per claims 1,21,40,48,57 Sundqvist disclosed a system, comprising: a memory configured to store data associated with a plurality of incoming streams of different speeds (Page. 2, Paragraph. 0016); an interface controller comprising a first arbitration element to arbitrate among the streams to store the data in the memory, the first arbitration element including a number of first entries, one of the first entries indicating which of the streams is to be serviced in a particular first time slot, the streams being assigned to the first entries based on the speeds of the

streams (Page. 3, Paragraph. 0042); and a dispatch unit comprising a second arbitration element to arbitrate among the streams and configured to read the data from the memory using the second arbitration element (Page. 3, Paragraph. 0043)).

Where as Sundqvist disclosed a comparator configured to compare the determined number of entries, for one of the streams, to a watermark and determine whether to initiate flow control for the one of the streams based on a result of the comparison, where the watermark is particular to the one of the streams and independent of another watermark set for another one of the streams (Page. 6, Paragraph. 0054). One ordinary skill in the art at the time of the invention interpreted the watermark as an ID within the stream.

However Sundqvist did not disclose, “The second arbitration element including a number of second entries, one of the second entries indicating which of the streams is to be services in a particular second time slot, the streams being assigned to the second entries based on the speeds of the streams”.

In the same field of endeavor Vega-Garcia disclosed, The quality control mechanism performs three primary functions that allow it to affect the quality of the user experience, These functions include the following: (1) computing the available bandwidth for outgoing data streams 342 (2) dynamically selecting an optimal audio codec to be used for the outgoing audio streams to increase network performance and (3) dynamically selecting an optimal bandwidth and frame rate for outgoing video streams to increase network performance (col. 8, lines 3-12) .

It would have obvious to one ordinary skill in the art at the time of the invention was made to have incorporated the quality control mechanism performs three primary functions that allow it to affect the quality of the user experience, These functions include the following: (1) computing the available bandwidth for outgoing data streams 342 (2) dynamically selecting an optimal audio codec to be used for the outgoing audio streams to increase network performance and (3) dynamically selecting an optimal bandwidth and frame rate for outgoing video streams to increase network performance as taught by Vega-Garcia in the method and system of Sundqvst manage the bandwidth without cropping the information.

3. As per claims 2,22 Sundqvst-Vega-Garcia disclosed wherein the memory includes: a plurality of memory buckets corresponding to the streams (Sundqvst, col. 28, lines 65-67 & col. 29, lines 1-3).

4. As per claims 3 Sundqvst-Vega-Garcia disclosed wherein the memory buckets have a fixed size (Sundqvst, Page. 5, Paragraph. 0053).

5. As per claims 4,23 Sundqvst-Vega-Garcia disclosed wherein the first arbitration element is configured to store a plurality of entries, each of the entries including a stream number that identifies one of the streams (Sundqvst, Page. 5, Paragraph. 0053).

6. As per claims 5,24 Sundqvst-Vega-Garcia disclosed wherein the number of the first entries in the first arbitration element is programmable (Vega-Garcia, col. 8, lines 1-15).

7. As per claims 6 Sundqvst-Vega-Garcia disclosed wherein the interface controller is configured to: read one of the stream numbers from the first arbitration element, providing a list of potential proxy candidates; providing a search mechanism to add more candidates to said list of potential proxy candidates; and receiving a selection of one or more of said potential proxy candidates, including a selection of said first entity (Vega-Garcia, col. 8, lines 34-52).

8. As per claims 7,26 Sundqvst-Vega-Garcia disclosed wherein the interface controller is further configured to send a stream identifier with the data transferred to the memory (Sundqvst, Page. 5, Paragraph. 0053).

9. As per claims 8,27 Sundqvst-Vega-Garcia disclosed wherein the memory is further configured to sort the data from the interface controller based on the stream identifier (Vega-Garcia, col. 12, lines 1-15).

10. As per claims 9,28 Sundqvst-Vega-Garcia disclosed wherein the first and second arbitration elements are synchronized (Vega-Garcia, col. 12, lines 1-15).

11. As per claims 10,29 Sundqvst-Vega-Garcia disclosed each of the second entries including a stream number that identifies one of the streams (Vega-Garcia, col. 7, lines 40-49).

12. As per claims 11,30 Sundqvst-Vega-Garcia disclosed wherein the number of second entries in the second arbitration element is programmable (Vega-Garcia, col. 7, lines 40-49).

13. As per claims 12,31 Sundqvst-Vega-Garcia disclosed wherein the dispatch unit is configured to: read one of the stream numbers from the second arbitration element, read data corresponding to the identified stream from the memory, and output the data for processing (Sundqvst, Page. 5, Paragraph. 0053).

14. As per claims 13,32 Sundqvst-Vega-Garcia disclosed further comprising: flow control logic configured to initiate flow control on the storing of data in the memory (Sundqvst, Page. 5, Paragraph. 0053).

15. As per claims 14,36,42,50 Sundqvst-Vega-Garcia disclosed wherein the flow control includes dropping data from the stream (Sundqvst, Page. 5, Paragraph. 0053).

16. As per claims 15,37,43,51 Sundqvst-Vega-Garcia disclosed wherein the flow control includes causing the interface controller to stop storing data from the stream in the memory (Sundqvst, Page. 5, Paragraph. 0053).

17. As per claims 16,33,47 Sundqvst-Vega-Garcia disclosed wherein the flow control logic includes: a buffer configured to temporarily store the data from the interface controller in a plurality of entries, a counter configured to determine a number of entries in the buffer

corresponding to each of the streams (Sundqvst, Page. 5, Paragraph. 0053), and comparator configured to determine whether to initiate the flow control for each of the streams based on the determined number of entries for the stream (Sundqvst, Page. 6, Paragraph. 0056).

18. As per claims 17,34,41,49 Sundqvst-Vega-Garcia disclosed wherein the comparator is configured to compare the determined number of entries for a stream to a watermark and initiate the flow control for the stream when the determined number of entries exceeds the watermark (Sundqvst, Page. 4, Paragraph. 0043).

19. As per claims 18,35,44,52,64 Sundqvst-Vega-Garcia disclosed wherein the comparator is further configured to compare the determined number of entries for the stream to a second watermark and drop data from the stream when the determined number of entries exceeds the second watermark (Sundqvst, Page. 6, Paragraph. 0054).

20. As per claims 19,38 Sundqvst-Vega-Garcia disclosed wherein each of the streams has an associated watermark for performing flow control on the storing of data in the memory (Sundqvst, Page. 5, Paragraph. 0053).

21. As per claims 20,39,46 Sundqvst-Vega-Garcia disclosed wherein each of the streams has two associated watermarks for use in performing flow control on the storing of data in the memory (Sundqvst, Page. 5, Paragraph. 0053).

22. As per claim 25 Sundqvst-Vega-Garcia disclosed wherein the storing includes: reading one of the stream numbers from the first arbitration element, gathering data corresponding to the identified stream, and transferring the data to the memory (Vega-Garcia, col. 7, lines 40-49).

23. As per claims 55,56 Sundqvst-Vega-Garcia disclosed a system for performing flow control on data in a plurality of incoming streams of variable speeds, comprising: a buffer configured to temporarily store data from a plurality of streams of variable speeds in a plurality of entries (Sundqvst, Page. 5, Paragraph. 0053); a counter configured to determine a number of entries in the buffer corresponding to each of the streams (Sundqvst, Page. 6, Paragraph. 0056); and a comparator configured to: compare the determined number of entries for a stream to first and second watermarks, initiate flow control for the stream when the determined number of entries exceeds the first watermark, and drop data from the stream when the determined number of entries exceeds the second watermark (Sundqvst, Page. 4, Paragraph. 0043).

24. As per claims 59,61 Sundqvst-Vega-Garcia disclosed wherein at least one of the arbitration element or the second arbitration element is configured to be reprogrammed based on an input regarding a speed of at least one of the streams (Vega-Garcia, col. 7, lines 40-49).

25. As per claims 62,63 Sundqvst-Vega-Garcia disclosed where reprogramming the at least one of the first arbitration element or the second element arbitration element includes changing the rate at which data associated with the one of the streams is stored in or read from the memory (Vega-Garcia, col. 7, lines 40-49).

Response to Arguments

26. Applicant's arguments filed 02/20/2009 have been fully considered but they are not persuasive. Response to applicant's arguments is as follows.

A. Applicant argued that Vega-Garcia et al reference priority date is not applicable for 103 rejection.

As to applicant's argument the Vega-Garcia et al (U.S. 7,151,749) reference received the priority date from the provisional application that is June 14, 2001 that beats the Applicant's filing date of November 26, 2001. Therefore the reference is available as a reference under 35 U.S.C 103 (a). The rejection holds on the ground of 103(a) rejection.

B. Applicant argued that prior art did not disclose, an interface controller that comprises a first arbitration element to arbitrate among a plurality of streams of different speeds to store data in a memory, where the first arbitration element includes a number of first entries, one of the first entries indicates which of the streams is to be serviced in a particular first time slot, and the streams are assigned to the first entries based on the speeds of the streams.

As to applicant's argument Sundqvist disclosed, a flow controller for controlling, through manipulation of at least one protocol parameter, a bandwidth usage on the communications

connection of at least one data flow to a non real-time application on the terminal so as to ensure that said required bandwidth is instantly available to said real-time application flow when it is set up (Page. 2, Paragraph 0025). One ordinary skill in the art at the time of the invention knows that a flow controller is considered first arbitration element. An embodiment of the invention provides a possibility to limit an outgoing non-real time application flow by means of a flow control application queuing packets out from the non-real time application and supervising their sending times thus controlling the data flow out from the non-real time application (Page. 2, Paragraph. 0028).

C. Applicant argued that prior art did not disclose a dispatch unit that comprises a second arbitration element to arbitrate among the streams to read the data from the memory, where the second arbitration element includes a number of second entries, one of the second entries indicates which of the streams is to be serviced in particular second time slot, and the streams are assigned to the second entries based on the speeds of the streams.

As to applicant's argument Vega-Garcia disclosed, The quality control mechanism performs three primary functions that allow it to affect the quality of the user experience, These functions include the following: (1) computing the available bandwidth for outgoing data streams 342 (2) dynamically selecting an optimal audio codec to be used for the outgoing audio streams to increase network performance and (3) dynamically selecting an optimal bandwidth and frame rate for outgoing video streams to increase network performance (col. 8, lines 3-12). One

ordinary skill in the art at the time of the invention considered the quality control mechanism as the second arbitration element where audio and video data read from the data streams.

D. Applicant argued that examiner did not establish a prima facie case of obviousness regarding the independent claims.

As In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Vega-Garcia in the method and system of Sundqvst manage the bandwidth without cropping the information.

E. Applicant argued that prior art did not disclose that each of the first entries includes a stream number that identifies one of the streams.

As to applicant's argument Sundqvst disclosed, for an application flow into a first application on a first terminal a window size will be computed that indicate how many additional bytes that can be received in the internal buffers that are set up for the application flow. The window size is

transmitted in the window field with an ACK and indicates to a second application, with which the first application is communicating the maximum number of additional bytes that the second application can send to the first application. The invention uses the window-mechanism to restrict non real-time application flows at an early stage in order to guarantee a real-time application flow that it gets the bandwidth it requires from the instant it is set up (Page. 4, Paragraph. 0047).

F. Applicant argued that prior art did not disclose the number of the second entries in the second arbitration element is programmable.

As to applicant's argument Sundqvst disclosed The Flow Control Application (FCA) of the invention can overwrite the computed window size with a lower value for an incoming non real-time application flow that needs to be reduced to leave room to an incoming real-time application flow (Page. 4, Paragraph. 0047).

G. Applicant argued that prior art did not disclose a watermark for performing flow control, and each of the plurality of streams has an associated watermark for performing flow control on the storing of data in memory.

As to applicant's argument Sundqvst disclosed, reduce the non real-time application flows proportionally equal or to make decisions based on some weighting algorithm as to how much each non real-time application flow should be reduced. No matter what alternative is used, it is

important that the respective computed maximum limits of bandwidth for non real-time applications in to and out from the terminal are not exceeded by the sums of the bandwidth used by non real-time application flows in to and out from the terminal respectively. Depending on what method is used to decide how to reduce non real-time application flows, there may be different methods to compute and store information on how to reduce each flow, as for instance in a database. All the different methods and similar variations are envisaged to be within the scope of this invention (Page. 6, Paragraph. 0054).

H. Applicant argued that prior art did not disclose storing data from a plurality of streams of potentially different speeds in a memory using a first arbitration scheme that stores data associated with a faster one of the streams in the memory at a higher rate than data associated with a slower one of the streams.

As to applicant's argument Sundqvist disclosed The FCA will have to decide if and how much a non-real time application should be reduced. This decision is based on the information received from the real-time application about the bandwidth that the real-time application flows are going to need. Therefore the information on the needed bandwidth will be stored in memory on the terminal. From the information on the needed bandwidth the FCA can compute the maximum amount of bandwidth in to and out from the terminal by non real-time application flows in order to be able to guarantee the real-time application flows the needed bandwidth. This computed maximum amount of bandwidth may optionally also be stored in memory in the terminal (Page. 5, Paragraph. 0053)

Conclusion

27. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

28. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Adnan Mirza whose telephone number is (571)-272-3885.

29. The examiner can normally be reached on Monday to Friday during normal business hours. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571)-272-7304. The fax for this group is (703)-

746-7239. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

30. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866)-217-9197 (toll-free).

/A. M./
Examiner, Art Unit 2445

/VIVEK SRIVASTAVA/
Supervisory Patent Examiner, Art Unit 2445